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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/641,155 | 08/17/2000 | Spencer Wayne Bruce | 99-056 | 4735 |

7590 05/15/2003

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EXAMINER

PERRIN, JOSEPH L

ART UNIT

PAPER NUMBER

1746

DATE MAILED: 05/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|----------------------------------|------------------------------|--|
| Office Action Summary | Application No. 09/641,155 | Applicant(s) BRUCE ET AL. | |
| | Examiner Joseph Perrin, Ph.D. | Art Unit 1746 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

Response to Arguments

1. In view of the Supplemental Appeal Brief filed on 27 March 2003, PROSECUTION IS HEREBY REOPENED. New grounds of rejections are set forth below.
2. To avoid abandonment of the application, appellant must exercise one of the following two options:
 - (1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,
 - (2) request reinstatement of the appeal.
3. If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 7, 9, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,782,989 to Rueter.

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The claimed invention reads on Rueter as follows: Rueter discloses a process for cleaning a reactor comprising of feeding a solution selected from an aqueous base (column 3, line 64 – column 4, line 11), an organic solvent of isopropanol (column 4, lines 12-27) and acetone (column 3, lines 48-50); emptying the reactor (column 6, lines 24-27); wherein, the reactor is a heat exchanger (column 6, lines 17-21).

The elements in the claims read on the reference.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

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under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 3,985,572 to Petermann (hereinafter "Petermann") in view of U.S. Patent No. 4,863,524 to Komabashiri *et al.* (hereinafter "Komabashiri").

Re claims 1, 2 and 4, Petermann discloses a process of feeding a solution of water through multiple pressure sources to a reactor having an agitator with blades and pressure sources aimed at the agitator blades (column 5, lines 18-25; column 9, lines 27-48); emptying the reactor (Figure 1); wherein the multiple pressure sources are hoses equipped with nozzles (column 5, lines 18-25); wherein the water is fed to the reactor at a pressure from 2,000 psi (138 bar) to 6,000 psi (414 bar) (column 5, lines 18-25); and wherein the reactor is equipped with a heat exchanger in an external loop (Figures 8A-8F; column 4, lines 52-60).

Although Petermann does not explicitly disclose wherein the pressure sources are stationary nor wherein the agitator is rotated while the solution is fed to the reactor, Petermann does disclose wherein the agitator is stationary and the pressure sources are rotated while the solution is fed to the reactor (column 1, lines 27-43; column 9, lines 27-48).

Komabashiri teaches that it is known to clean polymerization reactors using “high-pressure jet cleaning” (column 1, lines 28-32) and rotating an agitator “to effect chemical cleaning”, *i.e.* improve chemical cleaning (column 4, line 57 – column 5, line 13). Therefore, the position is taken that a person of ordinary skill in the art at the time the invention was made would have been motivated to clean a reactor wherein the pressure sources are stationary and wherein the agitator is rotated while the solution is fed to the reactor, disclosed by Komabashiri, in place of wherein the agitator is stationary and the pressure sources are rotated while the solution is fed to the reactor, disclosed by Petermann, because one would have arrived at the same expected results (*i.e.* improved cleaning) since it has been held that a mere reversal of the essential working parts of a device involves only routine skill in the art. *In re Einstein*, 8 USPQ 167; *In re Gazda*, 104 USPQ 400 (CCPA 1955). The rearrangement of parts was also held to have been obvious. *In re Japikse*, 86 USPT 70 (CCPA 1950).

Re claims 1, 3, 5 and 6, Petermann does not explicitly disclose wherein the hoses are made of 316 stainless steel or wherein the cleaning liquid is aqueous base or caustic, but does disclose utilizing multiple nozzles with hoses to pressure clean a polymerization reactor with pressurized cleaning liquid (column 5, lines 1-25).

Komabashiri teaches that it is conventional to utilize material in a polymerization reactor, agitator, and baffle-plates of 316 stainless steel (column 4, lines 51-56) for improved corrosion resistance, and wherein the cleaning agent is aqueous base or caustic at a temperature of 100°C or less achieving a remarkable chemical cleaning effect (column 3, line 61 – column 4, line 20).

Therefore, the position is taken that a person of ordinary skill in the art at the time the invention was made would have been motivated to modify the polymerization reactor cleaning system, disclosed by Petermann, with 316 stainless steel material and cleaning solution of aqueous base or caustic at 100°C, disclosed by Komabashiri, in order to provide improved polymerization reactor cleaning while maintaining advantageous corrosion resistance. Further, the use of conventional material to perform their known functions in a conventional process is obvious. *In re Raner*, 134 USPQ 343 (CCPA 1962).

10. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rueter as applied above to claims 7, 9 and 10, in view of Komabashiri.

Recitation of Rueter is repeated here from above.

Rueter does not explicitly disclose wherein the organic solvent comprises 15-30 weight percent aqueous base and from 40-60 weight percent organic solvent, based on the total weight of the solution, and the remainder water.

Komabashiri teaches that it is known to provide a cleaning solution of a combination of an aqueous base and an organic solvent, such that the solution comprises 15-30 weight percent aqueous base and 40-60 weight percent organic solvent, and the remainder water (column 4, lines 1-4 and lines 14-15) as the cleaning solution for a polymerization reactor in order to achieve "a more remarkable chemical cleaning effect" (see entire reference of Komabashiri, for instance, column 5, lines 19-20).

Therefore, the position is taken that a person of ordinary skill in the art at the time the invention was made would have been motivated to modify the reactor cleaning process, disclosed by Rueter, with the chemical cleaning solution for cleaning polymerization reactors, disclosed by Komabashiri, in order to provide improved cleaning of a polymerization reactor.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 2003/0073595 to Dorton *et al.*, which discloses a process for cleaning polymeric equipment.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Perrin, Ph.D. whose telephone number is (703)305-0626. The examiner can normally be reached on M-F 7:30-5:00, except alternate Fridays.

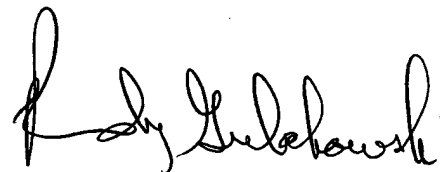
13. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (703)308-4333. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9310 for regular communications and (703)872-9311 for After Final communications.

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14. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.

Joseph Perrin, Ph.D.
Examiner
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jl
May 12, 2003

A handwritten signature in black ink, appearing to read "Randy Gulakowski". The signature is fluid and cursive, with a large initial "R" and "G".

RANDY GULAKOWSKI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700